

September 23, 2014

5th
6th

Starter

4 or 5 → 2

2 or 3 → 1

0 or 1 → 0

Compute each showing all of your work.

$$\begin{aligned} 1) \quad 2^3 \\ &= 2 \cdot 2 \cdot 2 \\ &= 8 \end{aligned}$$

$$\begin{aligned} 2) \quad -4^2 \\ &= -4 \cdot 4 \\ &= -16 \end{aligned}$$

$$\begin{aligned} 3) \quad (-3)^4 \\ &= (-3)(-3)(-3)(-3) \\ &= 9 \cdot 9 \\ &= 81 \end{aligned}$$

$$\begin{aligned} 4) \quad -3 \cdot 2^3 \\ &= -3 \cdot 2 \cdot 2 \cdot 2 \\ &= -6 \cdot 4 \\ &= -24 \end{aligned}$$

$$\begin{aligned} 5) \quad |-4 \cdot 3| \cdot (-2) \\ &= |-12| \cdot (-2) \\ &= 12 \cdot -2 \\ &= -24 \end{aligned}$$

9/23 Division with Integers

Use integer counters to show:

$$8 \div 2$$

Divide 8 into
2 piles.



The answer
is how
many are
in each pile.



$$-12 \div 3$$

Divide 12
into piles
that have
3 in each



The answer is
how many piles.

Division and Multiplication are inverse operations

so you can rewrite divide equations as multiply equations.

$$8 \div 2 = 4$$

$$4 \cdot 2 = 8$$

$$2 \cdot 4 = 8$$

Mult & divide
check each other

$$-12 \div 3 = -4$$

$$-4 \cdot 3 = -12$$

$$3 \cdot -4 = -12$$

Look at the signs - what are the rules for dividing integers?

(Discuss with your partner)

The diagram illustrates the rules for dividing integers based on the signs of the dividend and divisor. It shows four rows of signs (+, ÷, +, =) and (-, ÷, -, =) with arrows indicating the resulting sign (+ or -). A hand-drawn figure is pointing to the rules, and the text "Batman Rules work!" is written next to it.

+	÷	+	=	+
+	÷	-	=	-
-	÷	+	=	-
-	÷	-	=	+

Batman Rules work!

● On Your Own

Divide.

1. $14 \div 2 = 7$

2. $-32 \div (-4) = 8$

3. $-40 \div (-8) = 5$

4. $0 \div (-6) = 0$

5. $\frac{-49}{7} = -7$

6. $\frac{21}{-3} = -7$

$6 \div 0 = \square$

If nothing works, then the answer is \emptyset

Now some harder ones. Remember to use the Order of Operations!!

$$\begin{aligned} & -4 \cdot \frac{18}{-3} \\ & = -4 \cdot 6 \\ & = 24 \end{aligned}$$

$$\begin{aligned} & \left(\frac{6}{-2}\right)^2 \\ & = (-3)^2 \\ & = 9 \end{aligned}$$

$$\begin{aligned} & -5 \cdot \left(\frac{10}{-5}\right)^3 \\ &= -5 \cdot (-2)^3 \\ & \quad \quad \quad \text{-2} \cdot \text{-2} \cdot \text{-2} \\ &= -5 \cdot -8 \\ &= 40 \end{aligned}$$

$$\begin{aligned} & -4 \cdot \frac{3 \cdot -8}{6 \cdot -2} \\ &= -4 \cdot \frac{-24}{-12} \\ &= -4 \cdot 2 \\ &= -8 \end{aligned}$$

What does *mean* mean? "average"

- ① Add all of the numbers
- ② Divide the total by how many numbers there are.

Find the mean of each set of integers.

-16, -27, 21, -19, 14, -3

$$\begin{array}{r} 21 \\ + 14 \\ \hline 35 \\ + \quad -65 \\ \hline = -30 \end{array}$$

$$\frac{-30}{6} = -5$$

5, -7, 12, -10, 15

$$\begin{array}{r} 5 \\ + 12 \\ + 15 \\ \hline 32 \\ + -17 \\ \hline 15 \end{array}$$
$$15 \div 5 = 3$$

Homework

White WST

Due Thursday